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ABSTRACT

Because new developments in agriculture occur daily, periodicals, not textbooks, contain the most up-to-date information available about agricultural topics. Developing lessons from applicable periodicals will facilitate the delivery of a modern agricultural program. The periodicals should view agriculture from a global perspective and focus on science and technology current to agriculture, not just on production agriculture. The periodical should build upon the philosophical principles--experiential learning, problem solving, and decision making--that have been the foundation of vocational agriculture. The periodical that meets that criterion is "Science of Food and Agriculture," published by the Council for Agricultural and Science Technology (CAST) as a resource for classroom use. The comments and suggestions of teachers have shaped the publication into an easy-to-read, ready-to-use resource. Complex subjects have been "boiled down" so that the general public can understand them. The articles focus on subjects adaptable to various classroom situations. Articles are accompanied by related study questions, a learning activity, and/or an experiment. A 1988 workshop at Iowa State University resulted in the development of 15 complete agricultural science lesson plans using articles from "Science of Food and Agriculture" as references. The next issue will be distributed by the National Future Farmers of America to all chapters, state supervisors, state officers, and university agriculture education departments. The publication can be used at both the high school and university levels. (CML)

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KEEPING UP-TO-DATE through an AGRICULTURAL SCIENCE AND TECHNOLOGY PERIODICAL

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INTRODUCTION

New developments in agriculture occur daily. Therefore, innovative methods to keep up-to-date with science and technology in agriculture are needed. The traditional agricultural textbook can no longer be considered a current resource after a few years of use. Agricultural periodicals hasten the dissemination of "cutting edge" information. They are a frequently overlooked resource. Periodicals contain the most up-to-date information available about agricultural topics. Developing lessons from applicable periodicals will facilitate the delivery of a modern agricultural program.

Many agricultural periodicals are much like traditional vocational programs, narrowly focused on production agriculture. In contrast, new agricultural science and technology programs encompass a broad approach to the industry of agriculture. This change in program direction makes the selection of agricultural periodicals an important task. The periodical should view agriculture from a global perspective and focus on science and technology current to agriculture. It is imperative that the periodical provide young people with educational resources that bring to their attention developing technologies in agriculture and resulting new career opportunities. The magazine should build upon the philosophical principles that have been the foundation of vocational agriculture: experiential learning, problem solving, and decision making.

The periodical that meets the criteria mentioned above is Science of Food and Agriculture, published by the Council for Agricultural

Science and Technology (CAST). This publication offers a variety of new agricultural technologies and applications, written at an easily understood level. CAST encourages the reproduction of its publication for independent distribution. Articles are written by leading professionals throughout the industry of agriculture.

Agriculture is a field in which technology and careers are rapidly changing. Utilizing periodicals that addresses the broad nature of agriculture will facilitate the implementation of agricultural science and technology programs in a variety of contexts. A periodical such as the Science of Food and Agriculture allows teachers and students to explore new sources of applicable information while keeping abreast of new developments in the world of agriculture. Periodicals provide an effective method to enhance the learning process.

HOW IT WORKS

The Council for Agricultural Science and Technology specifically publishes Science of Food and Agriculture as a resource for classroom use. With the advent of Agriculture Science and Technology programs, the publication fills a niche within the new curriculum since few periodicals focus on the science and technology aspects of agriculture. It offers teachers information on how the latest scientific and technological developments affect modern agriculture and ultimately the food on their tables.

CAST solicits comments and suggestions from classroom teachers in order to make Science of Food and Agriculture more "user-friendly". The comments and suggestions have shaped the publication into an easy to read, ready to use resource for anyone interested in teaching the

science of agriculture. A concerted effort to "boil down" the most complex of subjects has been made by the publisher and authors so the general public can understand them. The articles focus on subjects that are adaptable to various classroom situations. Proceeding an article are related study questions, a learning activity, and/or an experiment. Besides articles, the publication provides a career page and a section on "cutting edge" developments in agriculture. Alternative activities are encouraged by the publisher. CAST recently sponsored a contest by asking teachers to submit creative learning activities and experiments to be considered for publication.

RESULTS TO DATE

Although CAST has concentrated on making Science of Food and Agriculture applicable for classroom use, complete lesson plans increase the use of the articles by agriculture instructors. An Agricultural Education Workshop at Iowa State University during the summer of 1988 focused on incorporating science concepts into the high school agricultural science, technology, and marketing curriculum. One of the more significant accomplishments of workshop participants was the development of fifteen complete agricultural science lesson plans using Science of Food and Agriculture articles as references. The lessons were developed in outline format. They included: objectives, references, visual masters, interest approach, questions to consider, student activities, and conclusions. A suggested procedure for developing a lesson is listed below:

1. Select and read a lesson from the guide.
2. Duplicate the reference for student use.
3. Make transparencies from reference as indicated in the lesson outline.
4. Select activities as appropriate and secure necessary supplies as indicated in lesson outline.
5. Use the interest approach and objectives to introduce the lesson.
6. Use the questions as a discussion outline or study guide.
7. Use a student activity to give the students a practical application of the concept.
8. For evaluation, use the objectives and questions for review and an oral or written quiz.

During 1988-1989, Science of Food and Agriculture was distributed to all Iowa agriculture instructors, courtesy of Iowa State University's College of Agriculture. The College of Agriculture Administration viewed the publication as an excellent classroom resource and recruitment tool. Subscription costs were $1.00 per issue. The publication is produced on a biannual basis. Two hundred and eighty four subscriptions were purchased with College of Agriculture funds. Only one subscription is needed per department since CAST encourages the reproduction of its publication for independent distribution. A one page guide developed by I.S.U. staff accompanied the publication distributed to Iowa agriculture teachers. The guide included objectives, interest approach, conclusion and recommended activities for each major article. The information presented was adapted to agricultural situations in Iowa.

The next issue of the publication will be distributed by the National FFA Association to all FFA Chapters, State Supervisors, State Officers, and University Agriculture Education Departments. The National FFA will send the publication with the agri-science brochures to be mailed this fall.

The CAST publication can further the growth of agricultural science and technology programs at the high school level. It provides a much needed break from textbooks and standardized subject matter while directly focusing on the subject of agricultural science and technology. The publication makes students more aware of changing employment opportunities especially in the area of science and high tech careers in agriculture. Finally, the publication allows schools implementing agricultural science and technology programs to emphasize the new area in agricultural biotechnology and keep up with scientific technologies and innovations.

FUTURE PLANS

The publication has the potential to be used in a number of ways within agricultural education. At the university level, the publication can be the focus of a summer seminar on agri-science. It provides an applicable reference for agri-science lesson plans developed by student teachers in a methods class. An inservice workshop on the publication's uses can be offered by the state teachers' organization. Various articles and experiments could be integrated into a state-wide agri-science curriculum. The promise of state-wide pilot programs has been propelled by the distribution of this publication to vocational agriculture instructors throughout the nation. At the local level, it can be used in implementing agricultural literacy programs.

CAST also produces comprehensive task force reports on current agriculture issues that make excellent references for the educational classroom. The focus of recent reports follows:

1987: Diet & Health

Pests of Plants and Animals: Their Introduction & Spread

1988: Long-term Viability of U.S. Agriculture

Effective Use of Water in Irrigated Agriculture

1989: Economic & Health Risks Associated with Micotoxins

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